

From Web 2.0 to School 2.0?

Making room for student collaboration and interactivity opens schools to the possibilities and potentials offered by Web 2.0.

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IN EVERYDAY TALK, THE IDEA OF WEB 2.0 HAS BECOME LARGELY SYNONYMOUS WITH USING A RANGE of Internet services and social software. These include blogs, wikis, track-back functions, subscribing to and managing RSS feeds, podcasting, vodcasting, posting video clips to YouTube or regularly watching YouTubers' video diaries, using peer-to-peer networks to share large media files, online bookmarking, trading on eBay, photosharing on Flickr, and participating in social networks such as Meetup, MySpace, and Facebook.

At this level, Web 2.0 conjures up diverse images, such as someone finding resources and software online to make an animated music video and posting it to a fan site with an invitation to review the quality of the piece. We might imagine a middle school student listening to a podcast series on astronomy as part of his research for a school project.

We might think of a high school student with an intense passion for J.R.R. Tolkien's *The Lord of the Rings* trilogy correcting parts of its Wikipedia entry about northern European metal bands influenced by Tolkien's work. Or how about a student creating a social-networking page and uploading digital pictures of herself and her friends? And so on.

These examples are valid and accurate instances, but they do not make explicit the character-

istics of Web 2.0 that are most important for educators to consider, such as how Web 2.0 differs from Web 1.0, and what is at stake in the difference as far as education is concerned.

Web 1.0 vs. Web 2.0

The differences between Web 1.0 and Web 2.0 are ultimately differences in values and operating principles that are

reflected in Internet tools, processes, and relationships. Generally speaking, Web 1.0 is based on a model of producers and consumers, providers and users, and the provision of discrete products, commodities, and artifacts. In Web 1.0, personal websites are static, produced by the people who publish them, and choice and user activity are largely confined to deciding what predetermined paths one takes to navigate a site. The root metaphor for Web 1.0 is the published page: static, whole, owned, and administered.

In contrast, Web 2.0 is fluid, highly collaborative, and participatory. Its services and tools link people to other people with shared interests in interactive, flexible, responsive, and reciprocal ways. Rather than producing discrete packages for consumption, companies and projects provide resources that are enabling or mediating in nature. Web 2.0 reverses the operating assumption that relatively few will produce and relatively many will consume. Instead, it is easy for everyone to collaborate or further their interests.

Whereas Web 1.0 is proprietary, Web 2.0 is much more open and builds on trust relationships, such as when users permit others to remix their work. While the static page provided a metaphor for Web 1.0, flows or streams of data that can be sampled in whatever size chunks a user wants is the metaphor for Web 2.0. Web 1.0 is characterized by software developed by large companies that sell it to customers. Web 2.0 is characterized by "serviceware": customizable online

Quick Hit!

For an example of Web 2.0 in the classroom, check out the Flat Classroom project, in which 11th-graders in Bangladesh used a wiki to discuss Thomas Friedman's *The World Is Flat* with 10th-graders in Camilla, Ga. Find out more at flatclassroomproject.wikispaces.com.

services and applications accessed via a web browser and located entirely online, which can be accessed from any computer.

Some examples of Web 2.0 services include:

- **weblogging service providers:** Blogger, LiveJournal;
- **peer-to-peer file-sharing services:** YouTube, Break.com, iStockphoto, Azureus.com;
- **social-networking services:** Meetup, WAYN, MySpace, Facebook;
- **wikis and other collaborative-writing service providers:** seed wiki, FanFiction.Net;
- **collaborative, distributed-expertise encyclopedia projects:** Wikipedia;
- **online auction and trading services:** eBay, barter;
- **various search, feed, and aggregator services and facilities:** Google, Technorati, Squeet, Bloglines;
- **customizable online radio:** Pandora;
- **region-specific real-estate valuation and sales services:** Zillow;
- **maps and driving directions:** Google Maps, MapQuest;
- **travel and accommodation user-review and booking services:** Expedia.com, priceline.com; and
- **customizable new and secondhand online shops with user product reviews and recommendations:** Amazon.com.

The Attraction of Web 2.0

Web 2.0 services and technologies provide powerful means for realizing and amplifying diverse personal interests and purposes, as well as for discovering new ones. In part, the interest in and attraction to Web-based services is a function of the tools being complex and powerful, and presenting interesting challenges. In addition, for many users there is a sense of excitement from pulling down a podcast or a machinima movie, to either watch on the bus or send to a friend after school.

Furthermore, for participants in social networks, the technology provides opportunities to win kudos and derive a sense of creative achievement as an enabler or facilitator, as



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a participant and collaborator. Beyond this, however, much of the attraction of the tools is grounded in their status as the vehicles for pursuing personal passions and interests. Some of these pursuits are more or less purely social—being part of friendship networks, joining a group, or finding companionship—whether online or online and face to face. As such, Web 2.0 technologies are as vital to young people's everyday lives as the family telephone was in the past—and for the same reasons.

The degree of personalization, customization, and interactivity afforded by Web 2.0 technologies lends surpassing depth and potential sophistication and mastery to the pursuit of personal interests. Participants can readily locate information and resources on almost any conceivable topic. Moreover, they can readily access support and expertise, given generously and freely by familiars and unknowns. This is the attitude and worldview underlying the open-access/open-source movement that is integral to Web 2.0. Powerful reinforcers exist for participants when they interact with peers.

These include a sense of being taken seriously, the sense that one's identity matters to other people, the sense that there is always someone out there whose input can carry you forward, and the sense that one can contribute to enhancing other people's experiences and proficiency.

Web 2.0 and Formal Education

Web 2.0 reflects larger historical trends and an emerging mindset that run counter to some hallowed, traditional educational routines. These include acceptance of demonstrated proficiency as evidence of expertise, the right to recognition as an authority rather than dependence on certification and credentials, and a shift toward inclusiveness as the test of mean-

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The emergence of cyberspace in interaction with physical space is raising doubts about the efficacy of physical responses (e.g., blocking, filters, maintaining contrived scarcity) to issues arising in online environments. Blocks and filters spawn successive rounds of hacks and ruses to get around them. And diffusion of information and its widespread use and appropriation benefits creators and communities in ways that cannot be obtained if it's locked up. We find increasing awareness that mastery of process trumps mastery of content, and we see one-size-fits-all approaches losing ground to personalization, customization, flexibility, and modularity. Finally, we find the relationships of author-to-reader and producer-to-consumer losing ground to relationships of co-design and co-production. Game players, for example, are co-designers with game creators and producers of the games they play.

Protection, Web 2.0-Style

Along with rich benefits for learners, Web 2.0 environments also can present snags and risks. Taking insufficient care with the information we give out online, or with how we represent ourselves, can leave us vulnerable. Downloading certain kinds of material from file-sharing spaces might run us

afoul of copyright. Thoughtless participation in online jokes might mean we contribute unwittingly to someone else's misery. Signing up for a social-networking space might lead to breaches of privacy, online taunting and teasing, or having personal traumas aired publicly. Something as seemingly innocent as running a blog can open us up to parody, insult, or abuse by others who find our interests and viewpoints trivial, misguided, and amusing.

In approaching Web 2.0 spaces, the important thing is to minimize vulnerability to significant harm without sacrificing the potential for learning and collaborative activity. It is not about trying to eliminate risk altogether, which cannot be done, but about minimizing the prospects of harmful risk

Often, questions arise around the veracity of information and reliability of sources. Can we trust what we read on a blog or on Wikipedia? How do learners know which online material is well informed? Educators must recognize that Web resources, like conventional publications, reflect diverse social purposes and interests, and vary in quality. They need to be subjected to critical scrutiny just as we scrutinize conventional publications.

Helping young people minimize risks to personal safety and security when participating in Web 2.0 practices includes ensuring that they choose intelligent online aliases or usernames that do not send out signals that might make them vulnerable, take due care with the information they provide in online profiles, and be aware of options built into Web 2.0 services and resources to enhance their protection. For example, blog services offer private or public options with respect to who can view and/or comment on one's blog posts, and the range of personal information that is required for signing up.



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In a recent editorial in the *Montreal Gazette*, Michael Hoechsmann argues that calling for laws to regulate who can post what and where online is not the answer. He reminds readers that bullying and intimidation are rife in people's offline lives and argues for the important role education can play in addressing common unresolved offline issues that seep into online lives. Wise suggestions about what this might look like educationally are offered by Will Richardson, a prominent educational blogger. He argues that adults and children need to share responsibility for addressing bullying at a grassroots level and describes how he addresses bullying in his own home. Richardson says he:

- talks to his kids about **what bullying is**;
- starts conversations about **how to deal with** being bullied;
- helps to **empower** them to stand up for themselves and others;
- points out **bias** and **objectification** when he sees it;
- points out gratuitous **violence** when he sees it;
- points out **victimization** when he sees it;
- models **appropriate responses** to inappropriate contacts or content;
- models **empathy** and **inclusiveness**;
- models **cooperation** instead of competition; and
- models a **peaceful presence** in the world.

Teachers and students enacting these principles would create a learning space of safety and security. Teachers whose online lives are mature and informed will be as well prepared to play a full role in a classroom's online life as they are in the physical classroom. Here, as elsewhere, knowledge is power. There are no easy answers, but encouraging teachers to build mature online lives is a sound and pragmatic place to begin. Professional development that enables teachers to become proficient participants in Web 2.0 spaces could take the place of blocking and imposing punitive rules and privations when it comes to using new technologies for educational purposes.

At the same time, viable Web 2.0 learning in classrooms calls for significant changes to pedagogy and evaluation. Such learning will emulate Web 2.0 principles and align them with educational purposes. It will not merely reproduce at-home Web 2.0 practices in school. Rather, it will make space for work that is undertaken collaboratively, where it is appropriate to do so, and will recognize and reward collaborative achievement as part of students' learning portfolios. School-based learning will match learners to challenges in ways that parallel what these same learners do in home and community contexts. If peers can recognize, applaud, and reward contributions and achievements online, so can schools.

Schools and classrooms that successfully incorporate Web 2.0 principles, resources, and technologies will adopt a new form of learning that involves co-design, co-creation, and shared problem solving. This new learning will work best

Web 2.0 Terms

Blog: A type of website that enables users to post text and photos in an easily managed way. Posts can be added as often as the user wants, and the owner can include options for readers to comment or to track what other blogs links to each post.

Folksonomy: A kind of organic keyword map of content available on a given website or with respect to an online service. Folksonomies are folk (as distinct from official expert) classifications of a body of available content.

Machinima: A word made from combining—with a misspelling—machine and cinema, machinima refers to the practice of making movies using role-playing game engines.

Mashup: Combining existing content or applications in a new, useful, and innovative way that was unplanned for by the original creators.

Permalinks: The full and permanent URL or web address of each blog post. This means that even when a post is archived it can still be linked to, read, and discussed by other bloggers.

Podcast: The regular posting of digital audio files, to which interested others can subscribe and receive automatically, using RSS feeds and a subscription-management service.

RSS (Really Simple Syndication): A set of codes used to establish a subscription feed for a blog. The code allocates a syndication address that automates the delivery of new posts to subscribers' e-mail inboxes or to their blog RSS feed readers—Internet or desktop-based software applications that automate RSS subscriptions (e.g., Bloglines).

Social software: Designed to encourage like-minded users to create content, share content and ideas, and collaborate on projects or content development for the network in order to participate, interact, and make connections between things and people.

Tags: Descriptive metadata in the form of key words people choose for describing, summarizing, or capturing elements of items or artifacts presented on the Web. A classic example is a photo of a baby dog that is tagged as both *puppy* and *cute*. Collectively, tags or key words generate a folksonomy.

Trackback: A feature built into some blogs that enables readers to track what other blogs link directly to a particular post on a given blog. Tracking links can help readers map networks of participation in a given topic.

Vodcast: Just as podcasting handles audio clips, vodcasts comprise video clips pertaining to a set of topics, themes, or content made available to subscribers on a regular basis.

Wiki: A website that allows users to add, remove, and edit every page using a web browser. Wiki is Hawaiian for "quick."

Top Sites on Web 2.0

Get to know these sites. Your students do.

Azureus.com
www.azureus.com

Blogger
www.blogger.com

Bloglines
www.bloglines.com

Break.com
www.break.com

del.icio.us
del.icio.us

Facebook
www.facebook.com

FanFiction.Net
www.fanfiction.net

Flickr
www.flickr.com

Internet Archive
www.archive.org

iStockphoto
www.istockphoto.com

LiveJournal
www.livejournal.com

Meetup
www.meetup.com

MySpace
www.myspace.com

Pandora
www.pandora.com

seedwiki
www.seedwiki.com

SchoolBoredom.com
www.schoolboredom.com

Second Life
www.secondlife.com

Squeet
www.squeet.com

Technorati
www.technorati.com

Teen Second Life
teen.secondlife.com

Twitter
www.twitter.com

WAYN
www.wayn.com

Wikipedia
www.wikipedia.org

YouTube
www.youtube.com

when guided by teachers who not only understand the substantive learning areas, but also know how to translate existing learner interests into worthy problems and challenges whose solutions involve productive activity guided by expertise, including those experts whose work inhabits Web 2.0 spaces. Again, there is no mystery here. Consider for example the student who struggles with essay-writing exercises in class, but receives positive reviews and encouragement for his original Harry Potter chapter on FanFiction.Net. The classroom of the future will find similar ways to incorporate Web 2.0 resources and practices into the formal learning environment.

Such work is disciplined and systematic. It is grounded in thought, reasoning, expression, feeling, and social practice. Its purpose is to contribute to developing competent thinkers; emotionally mature persons; informed and responsible citizens; loving and caring companions, friends, and peers; people who make the most and best of their bodies and health; and people who are open to new and special experiences.

The focus of curricular learning is not in question. The learning approach, however, is. Some people think of these new approaches in terms of knowledge-producing, rather than knowledge-consuming, schools. Others talk in terms of developing affinities spaces—online places where people share knowledge and expertise—for curricular learning. The guiding principles in all such accounts, however, include many that are best served by Web 2.0's services, resources, and tools. ●●●

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